

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-6. (CANCELLED)

7. (PREVIOUSLY PRESENTED) A method for elucidating reaction dynamics of photoreactive compounds in vivo, comprising the steps of:

- a) irradiating a ROI with a probe beam;
- b) recording the tissue fluorescence, phosphorescence and absorption characteristics at at least one wavelength;
- c) administering a photoreactive agent;
- d) irradiating the ROI with the probe beam;
- e) recording the luminescence intensity and lifetime and absorption characteristics of the ROI at at least one wavelength when $B = 0$ Tesla;
- f) applying a magnetic field of a predetermined strength so that the combination of the magnetic field and irradiation induces a chemical reaction in said photoreactive agent;
- g) simultaneously recording the luminescence intensity and lifetime and absorption characteristics of the ROI at at least one wavelength when $B > 0$ Tesla;

- h) repeating steps f) and g) for different magnetic field strengths;
 - i) turning off said probe beam;
 - j) processing data obtained; and
 - k) displaying results obtained by said processing on a display.
8. (ORIGINAL) The method of claim 7, wherein a therapeutic beam is employed, and wherein said method includes the step of turning on the therapeutic beam for a set time then turning it off, then repeating steps d) through i).
9. (ORIGINAL) The method of claim 7, wherein said steps of recording and said step of performing PDT are simultaneous.
10. (ORIGINAL) The method of claim 7, wherein the probe beam and the therapeutic beam are of the same wavelength and are generated from the same source.
11. (ORIGINAL) The method of claim 7, wherein the probe beam and the therapeutic beam are of different wavelengths.
12. (ORIGINAL) The method of claim 7, wherein the probe beam and the therapeutic beam use the same source and wavelength, and where the therapeutic beam is more intense than the probe beam.
13. (ORIGINAL) The method of claim 7, wherein multiple wavelengths are measured at the same time.

14. (ORIGINAL) The method of claim 7, wherein said method further comprises the step of recording the tissues oxygenation and blood perfusion of the ROI either before administering the photoreactive agent; after turning off the probe beam; or both.

15-17. (CANCELLED)